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line period, because in these cases the illumination phase duration required for the exposure of the intermediate carrier already makes up a significant portion of the line period, so that the beginning of the illumination phase can no longer be shifted significantly within the line period.

In the second method from the above-cited reference, a print line correction is made by using different groups of light sources to simultaneously expose segments of different print lines. This means that the beginning of the illumination phase of a light source group cannot be shifted continuously, but rather only in whole-number multiples of a line period. This method does in principle enable the correction of gross print image deviations, but only up to the degree of precision of a line spacing, which does not result in advantageous print image quality.

Additional prior art references include US 6,201,596 B1 and EP 0 367 550 A2.

The present invention is based on the object of indicating a method and a device that enable the production of a high-quality charge image at a moderate expense.

According to the present invention, this object is achieved by a method having the features of Claim 1 and by a device having the features of Claim 11. Advantageous developments of the present invention are indicated in the additional claims.

According to the present invention, instead of minimizing imaging errors by means of ever-greater precision in the design and installation of the character generator, it is proposed to accept a certain amount of design-caused imaging error, and to correct this error through a suitable selection of the temporal beginning of the illumination phases of individual light sources or of groups of light sources.

In order to achieve this, for each group of light sources a separate functional unit is provided for controlling the light sources, and the light sources of each group are controlled by a

Claims

1. Method for producing a charge image on an intermediate carrier (30) of an electrophotographic printer or copier,

in which a character generator (34) having a multiplicity of light sources (36) arranged in at least one row is used,

in which the at least one row of light sources is imaged onto the intermediate carrier (30) as an exposure line (56), and the intermediate carrier (30) can be displaced essentially transverse to the exposure line relative to the character generator, and

in which the temporal beginning of the illumination phases of groups (36) of light sources is selected such that deviations of the exposure line (56) from a target line (58) are minimized, a separate functional unit (38) being provided for each light source group (36) for the controlling of the light sources, the light sources of each group (36) being controlled by a control unit (46) assigned separately to the functional unit (38).

2. Method according to Claim 1, in which the control units (46) of the functional units (38) control the light source groups (36) independently of a clock pulse that is predetermined by a line period provided for the processing of a printed page **[sic: line]**.

3. Method according to Claim 1 or 2, in which the functional units (38) are connected to a central control unit (40) and have an address via which they can be controlled in targeted fashion.

4. Method according to one of the preceding claims, in which the control unit (46) of each functional unit (38) is controlled by the central control unit (40) in order to initiate the illumination phase of the associated light source group (36).

5. Method according to Claim 4, in which the central control unit (40) gives the control unit (46) of each functional unit (38) an individual start command for controlling the associated light source group (36), the time of the start command being selected such that a deviation of the exposure line segment corresponding to the light source group (36) from the target line (58) is minimized.

6. Method according to one of the preceding claims, in which the functional units (38) are arranged operatively in a row, and receive data and/or a clock signal via an input interface (48), and, except for the last functional unit in the row, forward these data and/or this signal to the next functional unit (38) in the row via an output interface (50).

7. Method according to Claim 6, in which between the reception and the forwarding of the data and/or of the clock signal there is situated a system clock in which the clock signal is reproduced.

8. Method according to one of the preceding claims, in which data are stored in a volatile memory (44) that is separately assigned to the functional unit (38).

9. Method according to Claim 8, in which the data comprise the print data for the segments, corresponding to the light source group (36), of a plurality of lines to be printed.

10. The method according to Claim 8 or 9, in which the data comprise a correction parameter for each light source of the group (36) that represents its individual illumination intensity.

11. Device for producing a charge image on an intermediate carrier (30) of an electrophotographic printer or copier,

having a character generator (34) that has a multiplicity of light sources arranged in at least one row,

in which the at least one light source row is imaged as an exposure line (56) onto the intermediate carrier (30), and the intermediate carrier (30) can be displaced essentially transverse to the exposure line (56) relative to the character generator (34), and

in which the temporal beginning of the illumination phases of groups (36) of light sources can be selected such that deviations of the exposure line (56) from a target line (58) are minimized,

a separate functional unit (38) being provided for each light source group (36) for the controlling of the light sources,

and the light sources of each group (36) being controlled by a control unit (46) assigned separately to the functional unit (38).

12. Device according to Claim 11, in which the light source groups (36) can each be controlled by the control unit (46) of the associated functional unit (38), independently of a clock pulse that is predetermined by a line period provided for the processing of a print line.

13. Device according to Claim 11 or 12, in which the functional units (38) are connected to a central control unit (40), and have an address via which they can be controlled in targeted fashion.

14. Device according to one of Claims 11 to 13, in which the control unit (46) of each functional unit (38) can be controlled by the central control unit (40) in order to initiate the illumination phase of the associated light source group (36).

15. Device according to Claim 14, in which the central control unit (40) is programmed in such a way that it gives the control unit (46) of each functional unit (38) an individual start command for controlling the associated light source group (36), the time of the start

command being selected such that a deviation of the exposure line segment corresponding to the light source group from the target line (58) is minimized.

16. Device according to one of Claims 11 to 15, in which the functional units (38) are arranged operatively in a row, the functional units (38) having an input interface (48) for receiving data and/or a clock signal, and the functional units (38), with the exception of the last functional unit (38) in the row, having an output interface (50) for forwarding the data and/or the clock signal to the following functional unit (38) in the row.

17. Device according to one of Claims 11 to 16, in which the functional units (38) have a volatile memory (44).